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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,978	09/04/2003	Kazuhiko Fukutani	03500.017112.	4479

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EXAMINER

XU, LING X

ART UNIT	PAPER NUMBER
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1775

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/653,978

Applicant(s)

FUKUTANI ET AL.

Examiner

Ling X. Xu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 13-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/26/03.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-12 and 23-24, drawn to a product, classified in class 428, subclass 304.4.
 - II. Claims 13-22, drawn to a method of making the product, classified in class 216, subclass 75.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by another and materially different process such as a method comprising a step of preparing a porous material, which is made of the second material, and a step of removing some of the second material to form columnar pores and a region surrounding them.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Jason M. Okun on 7/29/2004 a provisional election was made with traverse to prosecute the invention of Group I, claims

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1-12 and 23-24. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-22 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in PCT/JP03/02999 on 3/13/2003, which claims the foreign priority of JP 2002-073111 and JP 2002-363164. It is noted, however, that applicant has not filed certified copies of the JP 2002-073111 and JP 2002-363164 applications as required by 35 U.S.C. 119(b).

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

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patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-12 and 23-24 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-12 and 26-27 of copending Application No. 10/640,047. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed invention in both applications recites a porous body comprising a plurality of pores and a region of amorphous surrounding them. The shape of the pores in Application ('047) is pillar-shaped which is considered the same or very closely similar to the columnar pores recited in the claims of present application. The amorphous surrounding region in Application ('047) contains oxide, which is encompassed by the limitations of the amorphous region recited in the present application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-12 and 23-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 8, it states that the first material is removed from the porous material structure in line 1 and the structure comprises columnar members containing the first material and an amorphous area containing the second material. It is unclear if the porous material with the first material removed would only have the second material (in this case, the second material would have 100 atom% in the porous material) or the porous material have some of the first material remaining in the structure and the second materials as the amorphous surrounding area (in this case, the amount of the remaining first material is unknown, and therefore, the amount of the second material based on the total amount of the first and second material in the porous material is unclear).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 and 23-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Brinker et al (US 5,858,457).

With respect to claims 1-2 and 5-7, Brinker discloses a porous film deposited on a substrate by a process comprising the steps of evaporation of solvent and water (col. 10, lines 50-67). The porous film comprises plurality of ordered pores with hexagonal, cubic, or lamellar shapes (col. 3, lines 60-67 and col. 10, lines 50-67). At least the hexagonal and cubic shapes are considered to have the same shape as the claimed columnar pores. In addition, these highly ordered pores with hexagonal, cubic or

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lamellar shapes are considered not branched and the diameters of the pores are substantially the same in the direction of depth. The pores formed by evaporation of solvent and water indicates that the ordered pores are substantially perpendicular to the substrate.

Brinker also discloses that the material for the porous film comprising silicon, aluminum, or combinations of silicon and aluminum (col. 10, lines 60-67). The final product of the film is in a relatively dense amorphous phase (col. 4, lines 1-11).

With respect to claims 3-4, Brinker discloses the pore size is about 1-20nm (col. 5, lines 55-67), which is within the claimed range of less than 20nm. Brinker also discloses that the spaces between pores are greater than about 1 nm (col. 4, lines 1-10), which indicates that the average intercentral distance may be about 2-21nm (since the pore size is about 1-20nm), which is within the claimed range of less than 30nm.

With respect to claims 23-24, Brinker discloses that the applications of the porous film include membrane (the "filter") or optical hosts (the "mask material").

Accordingly, Brinker discloses all the limitations of claims 1-7 and 23-24.

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-12 and 23-24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Brinker et al.

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With respect to claims 8-10, Brinker discloses the material for the porous film comprising silicon, aluminum, or combinations of silicon and aluminum (the “first and second material”) (col. 10, lines 60-67). The final product of the film is in a relatively dense amorphous phase (col. 4, lines 1-11).

It is noted that claim 8 is a product-by-process claim. Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps (MPEP 2113). “[E]ven though product – by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 227 USPQ 964, 966.

With respect to claims 11-12, Brinker discloses the pore size is about 1-20nm (col. 5, lines 55-67), which is within the claimed range of less than 20nm. Brinker also discloses that the spaces between pores are greater than about 1 nm (col. 4, lines 1-10), which indicates that the average intercentral distance may be about 2-21nm (since the pore size is about 1-20nm), which is within the claimed range of less than 30nm.

With respect to claims 23-24, Brinker discloses that the applications of the porous film include membrane (the “filter”) or optical hosts (the “mask material”).

As stated above, it is unclear if the final porous film comprises both first and second material or only the second material.

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If all the first material has been removed, since Brinker discloses that the porous film comprising the silicon (the "second material"), Brinker meets the limitations of the claimed invention.

If some of the first material still remains in the porous material, Brinker discloses that the porous film may comprise the combination of silicon and aluminum. Brinker does not specify the amount of the silicon and aluminum in the porous film.

However, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

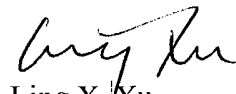
Therefore, it would have been obvious to one of ordinary skill in the art to discover the optimum or workable ranges of the first and second materials in the porous material of Brinker by routine experimentation.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling X: Xu whose telephone number is 571-272-1546. The examiner can normally be reached on 8:00 - 4:30 Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah D. Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ling X. Xu
Examiner
Art Unit 1775

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